Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

1-6 (cancelled)

7. (currently amended) A method of producing a vacuum gas oil (VGO), comprising

I) upgrading a heavy hydrocarbon feedstock by a method comprising:

i) providing a particulate heat carrier into an upflow reactor;

ii) introducing the heavy hydrocarbon feedstock into the upflow reactor at at least one location above that of the particulate heat carrier so that a loading ratio of the particulate heat carrier to the heavy hydrocarbon feedstock is from about 10:1 to about 200:1, wherein the upflow reactor is run at a temperature of from about 300°C to about 700°C;

iii) allowing the heavy hydrocarbon feedstock to interact with the heat carrier with a residence time of less than about 5 seconds, to produce a product stream;

iv) separating the product stream from the particulate heat carrier;

v) regenerating the particulate heat carrier; and

vi) collecting a gaseous and liquid product from the product stream, wherein the liquid product exhibits an increased API gravity, a reduced pour point, reduced viscosity and a reduced level of contaminants over that of the feedstock, and

II) isolating the VGO from the liquid product, wherein the VGO is characterized as comprising a measured analine point from about 110°F to about ~~150~~ 170°F, wherein the measured analine point is lower than a calculated analine point.

8. (previously presented) The method of claim 7, wherein in the step of introducing (step ii)), the loading ratio is from about 20:1 to about 30:1.

9. (previously presented) The method of claim 7, wherein in the step of introducing (step ii)), the heavy hydrocarbon feedstock is either heavy oil or bitumen.

10. (previously presented) The method of claim 7, wherein, in the step of allowing (step iii)), the product stream of a first pyrolysis run is separated into a light fraction and a heavy fraction, the light fraction is collected from the product stream, and the heavy fraction is recycled back into the upflow reactor for further processing within a second pyrolysis run to produce a second product stream.

11. (previously presented) The method of claim 10, wherein the further processing includes mixing the heavier fraction with the particulate heat carrier, wherein the particulate heat carrier of the second pyrolysis run is at a temperature at about, or above, that used in the processing of the feedstock within the first pyrolysis run.

12. (previously presented) The method of claim 11, wherein the heavier fraction is added to unprocessed feedstock prior to being introduced into the upflow reactor for the second pyrolysis run.

13. (previously presented) The method of claim 10, wherein the temperature of the upflow reactor within the first pyrolysis run is from about 300°C to about 590°C, and the temperature of the upflow reactor within the second pyrolysis run is from about 530°C to about 700°C, and wherein the residence time of the second pyrolysis run is the same as, or longer than, the residence time of the first pyrolysis run.

14. (previously presented) The method of claim 11, wherein the particulate heat carrier is separated from the second product stream, and a second product is collected from the second product stream.

15. (previously presented) The method of claim 10, wherein the product stream of the first pyrolysis run is treated within a hot condenser prior to recovery of the light fraction and the heavy fraction.

16-17 (cancelled)